

ELECTRONIC DEVICE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This non-provisional application claims priorities under 35 U.S.C. §119(a) on Patent Applications No(s). 104215241 and 105211361 respectively filed in Taiwan, R.O.C. on Sep. 21, 2015 and Jul. 27, 2016, and the entire contents of which are hereby incorporated by reference.

BACKGROUND

[0002] Technical Field

[0003] The disclosure relates to an electronic device, more particularly to an electronic device having one or more magnetic sensors.

[0004] Related Art

[0005] The development of technology allows people to use a variety of mobile electronic devices to do a variety of works. As an example, these mobile electronic devices include notebook computers, smart phones or tablet computers. A notebook computer includes a display for displaying interesting contents to a viewer, and a host for receiving and processing this viewer's command. A notebook computer may further include a pivot or hinge, through which the display can be connected to the host and pivotable relative to the host.

[0006] A notebook computer may further include a detection module to detect the switching-on-and-off of the display for power saving. When the display is covered, the host may automatically turn off the screen of the display according to the signal issued by the detection module for power saving. Specifically, an implementation of the detection module is carried out by a magnetic member and a magnetic sensing member. The magnetic sensing member detects the variations in magnetic force according to the variations in distance between itself and the magnetic member to learn of whether the display is covered or not. However, such a pivot is typically made of metal, has permeability, and is easily magnetized. If the magnetic sensing member is too close to the pivot, the pivot will affect the relative position of the magnetic sensing member and the magnetic member for detection, and this affect may cause the display to be unintentionally turned off or on. If the magnetic sensing member is farther from the pivot, a stronger magnetic force will be required by the magnetic sensing member to sense the magnetic field caused by the magnetic member. As a result, a higher cost is required to design notebook computers.

SUMMARY

[0007] The disclosure provides an electronic device to resolve the above problems in the art.

[0008] According to one or more embodiments, an electronic device includes a first body and a second body. The first body includes a first case and a magnetic member, and the magnetic member is disposed inside the first case. The second body includes a second case, a magnetic sensor, a magnetism guiding member and a switch control component, and the magnetic sensor, the magnetism guiding member and the switch control component are located inside the second case. The second case is connected to the first body to be movable relative to the first body. The magnetic sensor is disposed on the magnetism guiding member, and the

switch control component is electrically connected to the magnetic sensor. The magnetism guiding member guides a magnetic field caused by the magnetic member. The magnetic sensor detects a magnetic flux caused by the magnetic member. When the magnetic flux of the magnetic member detected by the magnetic sensor is larger than a first value, the switch control component controls the switching-on-or-off of a component.

[0009] In another embodiment, the first body has a first side, the second body has a second side, and the electronic device further includes a pivot member pivotably connected to the first side of the first body and the second side of the second body.

[0010] In another embodiment, a distance between the magnetic member and the pivot member is substantially equal to a distance between the magnetic sensor and the pivot member.

[0011] In another embodiment, the first body is connected to the second body through the pivot member so that the first body is movable relative to the second body to be at a first position or a second position; and a distance between the magnetic sensor and the magnetic member at the first position is longer than another distance between the magnetic sensor and the magnetic member at the second position.

[0012] In another embodiment, the magnetic flux of the magnetic field of the magnetic member detected by the magnetic sensor is smaller than the first value when the first body is at the first position; and the magnetic flux of the magnetic field of the magnetic member detected by the magnetic sensor is larger than or substantially equal to the first value when the first body is at the second position.

[0013] In another embodiment, the magnetic flux of the magnetic member propagated by the pivot member and detected by the magnetic sensor is constantly smaller than the first value.

[0014] In another embodiment, the magnetism guiding member includes a permeance body and an extended member, and the extended member extends from a side of the permeance body.

[0015] In other embodiments, an edge of the extended member on a size far from the permeance body is an arc or has at least one break angle. Optionally, an edge of the extended member on a size far from the permeance body includes a first edge segment, a second edge segment and a third edge segment, two ends of the second edge segment are respectively abut the first edge segment and the third edge segment, the first edge segment and the third edge segment abut the permeance body, an extension direction of the first edge segment has an angle with an extension direction of the third edge segment, and the first edge segment and the third edge segment are substantially straight. Optionally, an edge of the extended member on a size far from the permeance body includes a first edge segment, a second edge segment and a third edge segment, two ends of the second edge segment respectively abut the first edge segment and the third edge segment, the first edge segment and the third edge segment abut the permeance body, and the first edge segment and the third edge segment are curves.

[0016] In another embodiment, the extended member has a symmetric shape. Optionally, the extended member has an asymmetric shape.

[0017] In another embodiment, the permeance body is a quadrilateral plate.